

# In the United States Patent and Trademark Office

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## This is a Continuation in Part

Assistant Commissioner for Patents  
Washington, District of Columbia 20231

Sir:

This Continuation in Part relates to and totally incorporates by reference Application 09/225,229. It is requested that referenced application stand and issue without reliance on this Continuation in Part.

## Specification

### A Maturation Process for Wines

*Cross Reference to Related Applications:* 09/225,229

*Reference to Microfiche Appendix:* Not applicable.

*Background of the Invention:* Per Application 09/225,229

*Summary of the Invention:*

**Preferred Configuration** - The present invention provides for supportive additions to an invention covered by a prior application (Reference 09/225,229). The present invention provides alternative means for distributing air between cored air passages in the oak slabs of the prior and related invention and discloses alternatives to the formation of the oak slabs through the provision of a continuous internal void or transverse air channels. Example configurations are presented which accomplish the purpose of providing air exchange from one bore to another in a cored oak slab containing multiple bores.

**Primary Alternative** - The device in its preferred configuration consists of a manifold of food grade neoprene or other suitable food grade material that inner connects all air passages within the oak slabs and provides an air intake and air exit portal. Distribution ports on the manifold connect directly with cored passages in the oak slab and are sealed with food grade sealant and/or neoprene grommet sleeves. A single neoprene tube connects from the available air intake portal on the manifold and penetrates the containing vessel lid for air intake and another neoprene tube connects to the available air exit portal on the manifold and penetrates the containing vessel lid for air outflow. A positive air pressure is applied to the air intake tube and may contain pure oxygen or oxygen enriched air to aid oxidation.

**Alternative Configuration "A"** - An alternative configuration is identified for connecting the cored passages in the oak slabs. Instead of using the manifold as described in the primary alternative, individual air loop connectors can be employed to link adjacent bores together. The air loops can be made from neoprene, food grade plastic, stainless steel or other suitable food grade material and are sized to fit into cored passages. Sealing of the air loops with the oak slab would be accomplished with food grade caulking or neoprene grommets.

**Alternative Configuration "B"** - An alternative configuration is identified for connecting the cored passages in the oak slabs. Instead of using the manifold as described in the primary alternative, a continuous air cap can be employed across each face of the slab where the bores enter and exit the slab. This air cap would function in a similar manner to the manifold but would not directly connect to each bore, instead it would encompass all bores on one face of the slab. The air cap would contain an air intake port and an air exit port. The air cap would be cast from food grade plastic, stainless steel or other suitable food grade material. Sealing of the air cap with the oak slab would be accomplished with food grade caulking or neoprene gaskets.

**Alternative Configuration "C"** - An alternative configuration is identified for fabrication of the oak slabs wherein the surface area of the slabs is increased by introducing transverse slots through the oak slab on each side of each bore. These slots are cut through to within one inch of each face where the bores enter and exit the oak. Either the manifold cap or

those identified in Alternative Configurations "A" or "B" can be used for air innerchange between bores.

**Alternative Configuration "D"** – An alternative configuration is identified for introducing air inside of the oak slabs wherein a portion of the internal volume of the oak slab is removed to provide a completely hollowed out void. A continuous air cap (as in Alternative Configuration "B") is placed over the open portion of the slab created by extraction of the internal oak.

**Detailed Description** - Further understanding of the disclosure presented herein is described in drawings referenced as:

**Figure 1** – Plan view of typical rectangular aging vessel showing removable airtight lid and air inlet and outlet ports.

**Figure 2** – Plan view of preferred embodiment showing airtight lid removed revealing cored oak slabs in rectangular aging vessel.

**Figure 3** – Cut-away elevation view of typical rectangular aging vessel showing example arrangement of oak slab.

**Figure 4** – Cut-away plan view of typical cored oak slab as in the preferred embodiment.

**Figure 5** – Cut-away elevation view of typical cored oak slab as in preferred embodiment.

**Figure 6** – Cut-away plan view of Alternative Configuration "A" air loops.

**Figure 7** – Cut-away elevation of Alternative Configuration "A" air loops.

**Figure 8** - Cut-away plan of Alternative Configuration "B" air cap.

**Figure 9** – Cut-away side elevation view of Alternative Configuration "B" air cap.

**Figure 10** – Cut-away plan of Alternative Configuration "C" transverse slot oak slab.

**Figure 11** – Cut-away elevation of Alternative Configuration "C" transverse oak slab.

**Figure 12** – Cut-away side elevation of Alternative Configuration "D" hollowed oak slab.

**Figure 13** – End-on cross-section of Alternative Configuration "D" hollowed oak slab.

**Figure 14** – End-on detail of Alternative Configuration "B"

**Figure 15** – End-on cross-section detail of Alternative Configuration "C"

**Figure 1** discloses in plan view the preferred configuration rectangular aging vessel *1* with removable airtight lid *2* and air intake port *3* and air outlet port *4*.

**Figure 2** indicates a plan view of the above mentioned containing vessel *1* showing the oak slabs *5* and bores *6*. The number and spacing of oak slabs can be varied to match volume of the containing vessel and type of wine being aged.

**Figure 3** discloses in cross-sectional elevation view of the preferred configuration for utilizing oak slabs in the wine aging process. As shown, the rectangular containing vessel **1** is fitted internally with a through-cored oak slab **5**. The oak slab is up to one and one half inches thick and contains a .375 inch to .5 inch bore **6**. A manifold air innerchange **7** is connected to the bores in the oak slab and also to the air intake port **3** and air exit port **4**.

**Figure 4** indicates a cut-away plan view of the preferred configuration manifold **7** with air exit port **8** in relation to the oak slab **5** and bores **6**.

**Figure 5** indicates a cut-away elevation view of the preferred configuration manifolds **7** with air exit port **8** and air intake port **9** in relation to the oak slab **5** and bores **6**.

**Figure 6** indicates a cut-away plan view of Alternative Configuration "A" air loops **10** with an air exit port **11** in relation to the oak slab **5** and bores **6**.

**Figure 7** indicates a cut-away elevation view of Alternative Configuration "A" air loops **10** with an air exit port **11** in relation to the oak slab **5** and bores **6**.

**Figure 8** indicates a cut-away plan view of Alternative Configuration "B" air cap **12** with an air exit port **13** in relation to the oak slab **5** and bores **6**.

**Figure 9** indicates a cut-away elevation view of Alternative Configuration "B" air cap **12** with an air exit port **13** in relation to the oak slab **5** and bores **6**.

**Figure 10** indicates a cut-away plan view of Alternative Configuration "C" transverse slot **14** in relation to the oak slab **5** and bores **6**.

**Figure 11** indicates a cut-away elevation view of Alternative Configuration "C" transverse slot **14** in relation to the oak slab **5** and bores **6**.

**Figure 12** indicates a cut-away elevation view of Alternative Configuration "D" voided interior **15** in relation to the oak slab **5**.

**Figure 13** indicates an end-on cross-section detail of Alternative Configuration "D" internal void **15** in relation to the oak slab **5**.

**Figure 14** indicates end-on cross-section detail of Alternative Configuration "B" air cap **13** and sealant **16** in relation to oak slab **5** and bores **6**.

**Figure 15** indicates end-on cross-section detail of Alternative Configuration "C" transverse slot **14** in relation to oak slab **5** and bores **6**.